

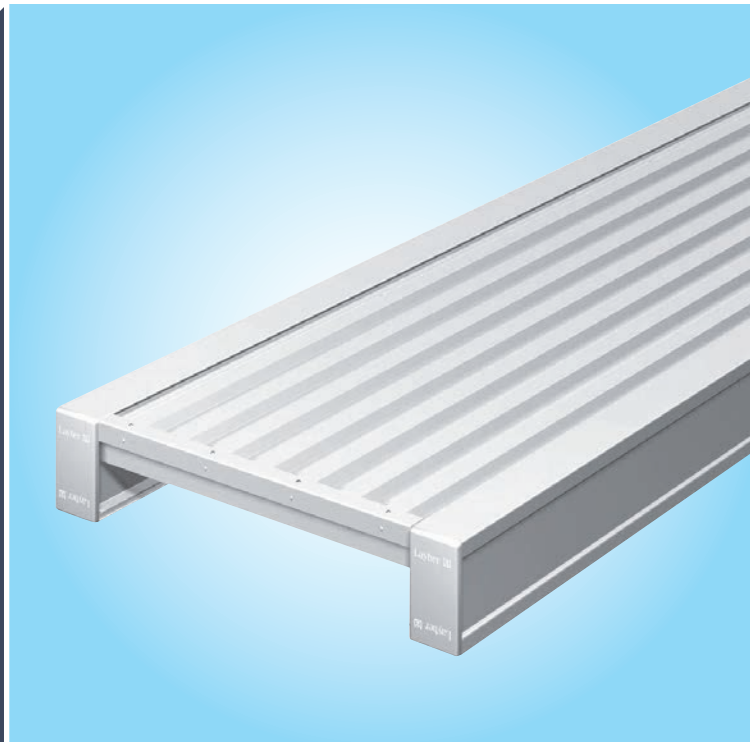
# LAYHER ALUMINIUM STAGE 600

## INSTRUCTIONS FOR ASSEMBLY AND USE

Work deck up to 10 m long

Permissible load class 2 ( $1.5 \text{ kN/m}^2$  up to 10 m length)

Permissible load class 3 ( $2 \text{ kN/m}^2$  up to 7.1 m length)



Edition 01.2013

Quality management  
certification as per  
DIN EN ISO 9001:2008  
by TÜV-CERT



CONTENTS

1. General directions for assembly and use .....2

2. Description .....3

3. Assembly .....3

4. Use in Layher SpeedyScaf.....5

5. Use in roof brick guard.....7

6. Beam connection .....8

7. Aluminium Stage, perforated version.....8

8. Certificate.....8

9. Components of the system .....9

NOTE

The products or assembly variants shown in these instructions for assembly and use may be subject to country-specific regulations. The user of the products bears the responsibility for compliance with such regulations. Subject to local regulations, we reserve the right not to supply all the products illustrated here.

Your Layher partner on the spot will be happy to provide advice and answers to all questions relating to the products, to their use or to specific assembly regulations.

All dimensions and weights are guideline values. Subject to technical modification.

The numbers highlighted in blue in these instructions for assembly and use relate to the item numbers of the available components (see Section 9).

1. GENERAL DIRECTIONS FOR ASSEMBLY AND USE

The present instructions for assembly and use must be available to the supervisor and to the employees involved. **Only original Layher components may be used.** Visually check all components prior to installation and before they are used to ensure that they are in flawless condition. Do not use damaged components. During assembly, modification and dismantling, as well as during use of the Aluminium Stage 600, the legal regulations of the German Ordinance on Industrial Safety and Health (BetrSichV) concerning the setting up and use of working equipment must be complied with. Further information on occupational safety can be found in the German publications BG-Information Nos. 663 and 5101, in Fachregel 1 (Specialist Rules 1) for Scaffolding Construction and in TRBS 2121 (Technical Rules for Industrial Safety).

Assembly

Always install the Aluminium Stage 600 horizontally. It is expressly pointed out that the Aluminium Stage 600 may only be assembled, modified and dismantled under the supervision of a qualified expert and by technically trained employees who have been adequately and specifically instructed in this work. The stability of the scaffolding must be assured at all times, including in the assembled state. To that extent, and with regard to use, we refer to the required conditions set forth in German Ordinance on Industrial Safety and Health (BetrSichV). Assembly, alteration and dismantling of the Aluminium Stage 600 involves risk from falls. Perform the assembly work in such a way that the risk of falls is avoided as far as possible and that the residual risk is minimized. The erector must stipulate, on the basis of how he assesses the risk, suitable measures to prevent or minimize risks for the specific case and/or for the respective activities involved.

Use

The user must check that the Aluminium Stage 600 is suitable and safe to use for the work to be performed. He must ensure that the Aluminium Stage 600 is checked for obvious defects before use. If the inspection reveals any defects, do not use the Aluminium Stage 600 until these defects have been rectified. The user must not push against the side protection.

### Dismantling

- To dismantle scaffolding, reverse the sequence of working steps described for assembly.
- Do not dismantle anchoring until the scaffolding levels above it have been completely dismantled.
- Remove immediately components of which the connectors have been released.
- Do not store scaffolding components on walkways, to prevent risk of tripping.

## 2. DESCRIPTION

The Aluminium Stage 600 is a lightweight work deck for bridging spans of up to 9.5 m.

It can be used for load class 2 or 3 depending on the length. The 60 cm wide aluminium structure with a non-slip walkway can be subjected to a surface load of 2.0 kN/m<sup>2</sup> up to 7.1 m and 1.5 kN/m<sup>2</sup> up to 10 m beam length, or alternatively to an individual load of 1.5 kN in each case. The folding version of the Aluminium Stage 600 can also be subjected to a surface load of 1.5 kN/m<sup>2</sup> or to an individual load of 1.5 kN.

The Aluminium Stages 600 (unperforated) may be used in brick guards with a guard level of class FL1 and in roof brick guards with protective walls of class SWD 1 as per DIN 4420-1:2004 in the guard level.

## 3. ASSEMBLY

### Supports

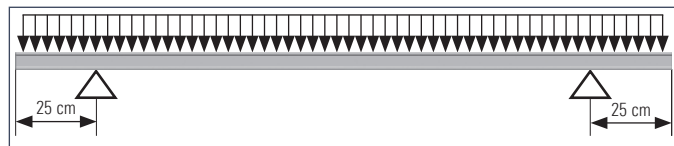


Fig. 1: Surface load 1.5/2.0 kN/m<sup>2</sup>

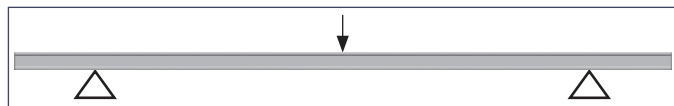


Fig. 2: Individual load 1.5 kN

Depending on the span, select the bridging beam length such that the **support length on both sides is at least 25 cm.**

The support structure must be sufficiently strong and stable. Provide a safeguard against lateral shifting, tilting and lifting. Dimension the support structure for the forces specified in the table.

Verification has already been provided for use in Layher SpeedyScaf structures as a work deck and as a brick guard deck as per item 4. Increasing the support length reduces the span and permits an increase in the load. Verification is required here for each individual case.

Beam length* (m)	Span* (m)		Support force (kN)	
	Load class		vertical	horizontal**
3.18	2.68	3	1.71	0.3
4.12	3.62	3	2.30	0.3
4.75	4.25	3	2.70	0.3
5.20	4.70	3	3.01	0.3
6.15	5.65	3	3.61	0.3
7.10	6.60	3	4.22	0.3
8.00	7.50	2	3.71	0.3
9.10	8.60	2	4.25	0.3
10.00	9.50	2	4.69	0.3
Alu Stage 600, folding				
5.10	4.60	2	2.93	0.3
7.30	6.80	2	3.37	0.3
9.15	8.65	2	4.28	0.3

\* Support length: min. 25 cm at each support

\*\* Forces from wind loads must be additionally taken into account

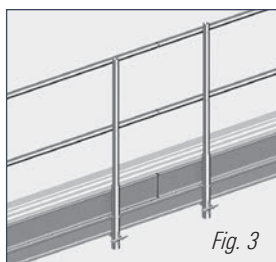
## Side protection

A three-part side protection as per EN 12811-1 must be attached if required by valid regulations for work to be performed. Installation of side protection is mandatory for standing heights above 2.0 m. The distance between the Layher Aluminium Stage 600 and the structure must not exceed 30 cm. With a greater distance, a three-part side protection must also be fitted there.

**There are two ways to design this side protection:**

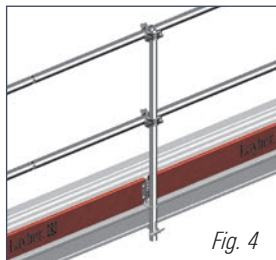
### 1. Double guardrail with toe board

To do so, first suspend the guardrail fixture 8 from the beam's section and lightly wedge it in place. Depending on the guardrail length, position the fixtures with 1.0 m or 2.0 m spacing. Then attach the double guardrail 7 and secure it against lifting off using the guardrail locking clip 9. Finally, wedge the guardrail fixtures tightly.



### 2. Guardrail with guardrail mounting standard, scaffolding tubes and couplers

For this variant, use the guardrail mounting standard 10. It is also suspended from the carrier section of the bridging beam and lightly wedged. Space the guardrail mounting standards 2 m or 3 m apart (depending on the beam length). Fit the toe board 12 onto the toe board pins provided, then the standard can be firmly wedged. Attach the guardrail and the intermediate rail, consisting of scaffolding tubes, using scaffolding couplers (at the 0.5 m and 1.0 m levels), thus forming a complete guardrail unit.

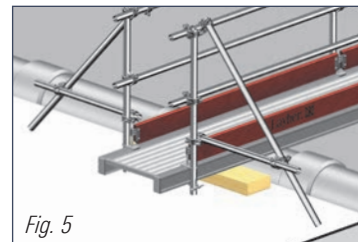


## Tilt preventer

Preventing tilting is important for Aluminium Stages with attached side protection. Particular care must be taken here with freely emplaced Aluminium Stages (see Example A).

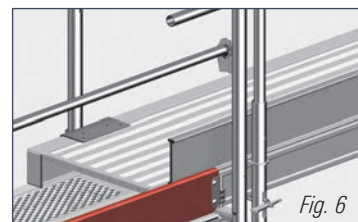
Example A:

Safeguarding of freely emplaced Aluminium Stages against tilting by attaching scaffolding tubes.



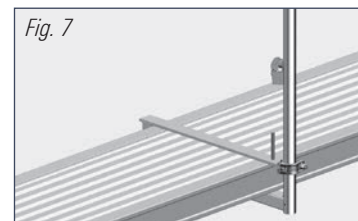
Example B:

Laying in Layher SpeedyScaf 0.73 m wide with squared timber coupler, large 4. If aluminium assembly frames are used, insert a spacer between the cross rung and the bridging beam.



Example C:

Layher SpeedyScaf 0.73 m with SpeedyScaf roof guard support holder 13 and Layher SpeedyScaf roof guard support 0.73 m 14.



## 4. USE IN LAYHER SPEEDYSCAF

Layher SpeedyScaf 0.73 m wide (steel), approved by DIBt (German Civil Engineering Institute) in Berlin as work and protective scaffolding up to load class 3 (Approval No. Z-8.1-16.2), must be assembled in accordance with the instructions for assembly and use of Layher SpeedyScaf.

1. The Aluminium Stage 600 can be used in Layher SpeedyScaf structures up to span of 3 m as a non-system scaffolding deck.
2. The Aluminium Stage 600 can be used as a bridging deck up to a span of 9.5 m or as a brick guard deck in the guard level. It is mandatory here to install three-part side protection as per EN 12811-1, or the SpeedyScaf roof guard and SpeedyScaf roof guard supports for use in a roof brick guard (for assembly see Section 5).

For use as a roof brick guard, the open proportion of the building in the area of the brick guard must not exceed the values in the following table. The maximum scaffolding bay length is 2.57 m. Anchor the two scaffolding bays every 4 m to each standard as per SpeedyScaf approval Z-8.1-16.2 using SpeedyScaf or other wall ties. The anchoring forces are, for scaffolding in front of closed and partially open façades without covering, 2.1 kN. Fit the brick guards as described in Section 5.

At the top level, fit V-shaped pairs of wall ties (diagonal load of one tie 2.3 kN, see Fig. 8). Secure all standard joints in the top two scaffolding levels with locking pins.



Fig. 8

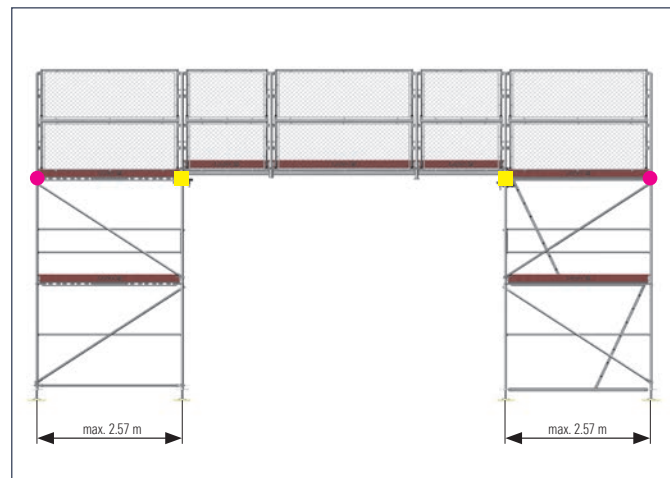


Fig. 9

- = V-type wall tie
- = SpeedyScaf or other wall tie

The Layher SpeedyScaf structure can be extended to both sides with further scaffolding bays.

Permissible variants for use of the Aluminium Stage 600 with brick guards				
Beam length (m)	Span (m)	Load class as per EN 12811-1	Suggested brick guard arrangement on the beam	In front of façades with open part in the area of the brick guards
3.18	2.68	3	2.57	up to 60 %
4.12	3.62	3	3.07	up to 60 %
4.75	4.25	3	2.07 + 2.07	up to 60 %
5.20	4.70	3	2.57 + 2.07 2.07 + 2.07	up to 60 %
6.15	5.65	3	2.57 + 2.57 2.57 + 3.07	up to 60 % up to 33 %
7.10	6.60	3	2.07 + 2.07 + 2.07 3.07 + 3.07	0 % 0 %
8.00	7.50	2	2.07 + 3.07 + 2.07	up to 46 %
9.10 (10.00)	8.60	2	2.57 + 3.07 + 2.57	0 %

Permissible variants for use of the Aluminium Stage 600, folding, with brick guards				
5.15	4.65	2	2.57 + 2.07	up to 60 %
7.30	6.80	2	1.57 + 2.57 + 1.57 2.07 + 2.07 + 2.07	0 %
9.15	8.65	2	2.57 + 3.07 + 2.57 2.57 + 2.57 + 2.57	0 %

## 5. USE IN ROOF BRICK GUARD

### Brick guard

**Only unperforated Layher Aluminium Stages 600** may be used as brick guard decks. For use of the Aluminium Stage 600 in a brick guard, a protective wall as per DIN 4420-1 is required. The latter is formed from SpeedyScaf roof guards [15](#), SpeedyScaf roof guard supports [14](#) and guardrail / SpeedyScaf roof guard support holders [13](#). Hold the SpeedyScaf roof guard support against the beam from underneath and place the SpeedyScaf roof guard support holder on the top of the beam. Connect both parts on one side with the half-coupler, and on the other side fitted into one another and secured with the screw supplied. Then fasten toe boards and brick guards to the place intended for them. For tilt preventer see Section 3. Connect the outer SpeedyScaf roof guard supports of the Aluminium Stage 600 with two connectors of tube and coupler on each side to the SpeedyScaf roof guard supports of the scaffolding. Alternatively, the brick guards of the Layher Aluminium Stage can also be directly connected to the outer SpeedyScaf roof guard support of the SpeedyScaf structure. It is necessary during assembly to ensure the precise axis dimension of the SpeedyScaf structure.

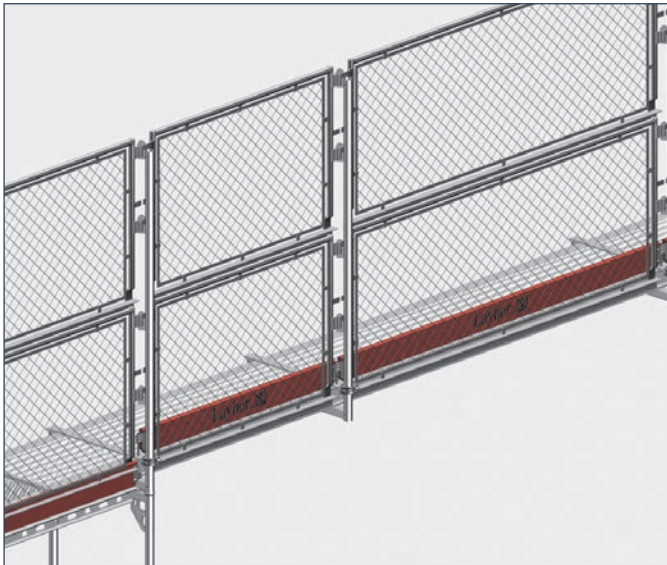


Fig. 10

### Clearance dimensions

In accordance with DIN 4420-1, the guard level of the roof brick guard must not be lower than 1.50 m ( $h_0$ ) below the risk-of-fall edge (e.g. eaves).

The distance (b) of the protective wall from the risk-of-fall edge must be at least 0.70 m.

The projection of the protective wall, relative to the risk-of-fall edge, must comply with the following condition:

$$h_1 - h_0 \geq 1.50 \text{ m} - b$$

The height  $h_1$  of the protective wall must however be at least 1.00 m (see Fig. 11).

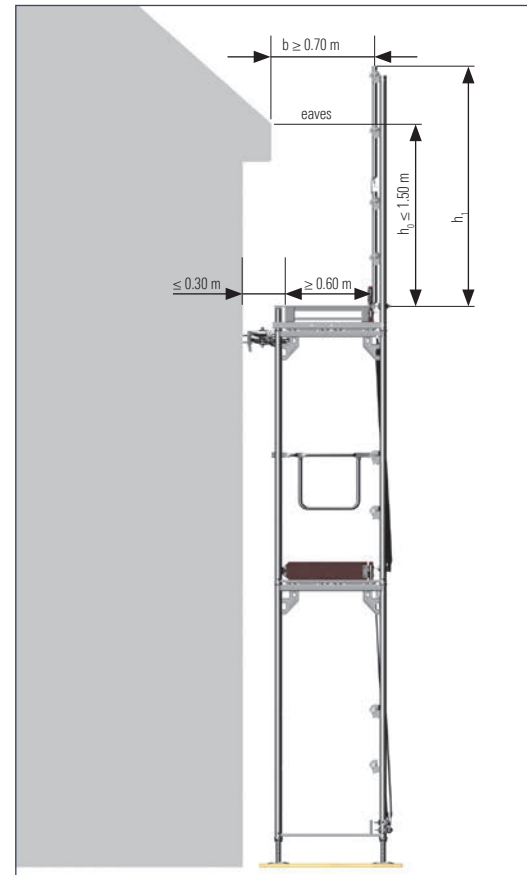
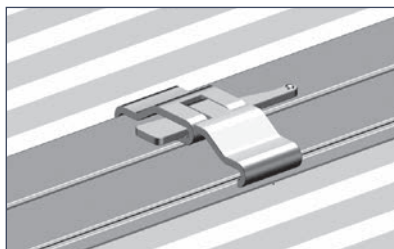


Fig. 11



## 6. STAGE CONNECTION

With the clamp 3, it is possible to join up several beams as a platform for joint load-bearing. To connect up beams and so that they can sustain loads together, place this clamp on the adjacent sections (in the centre up to 7.1 m, from 8.0 m to 10.0 m at the third-of-the-distance points) and tightly wedge it. **The clamp cannot be used for the folding Aluminium Stage 600.**



*Fig. 12*

## 7. ALUMINIUM STAGE, PERFORATED VERSION

The Aluminium Stage 600 in its perforated version as well as in its unperforated version can be used as a work deck in bridging applications as per these Instructions for Assembly and Use. **Use in standard and roof brick guards is not permissible!**

## 8. CERTIFICATE

ZERTIFIKAT ♦ CERTIFICATE ♦ ЗЕРТИФИКАТ ♦ CERTIFICADO ♦ CERTIFICAT

# C E R T I F I C A T E

No. Z1A 11 06 19959 074

Product Service

**Holder of Certificate:** Wilhelm Layher GmbH & Co. KG

Ochsenbacher Straße 56  
74363 Güglingen-Eibensbach  
GERMANY

**Factory(ies):**

19959

**Certification Mark:**

**Product:**

Loading gangways

**Model(s):**

Alu-stages 600 / Alu-stages 600 foldable

**Parameters:**

Platform width: 0.6 m  
Material: EN AW-6082-T5

Further parameter see attachment 1 and 2.

**Tested according to:**

DIN EN 12811-1:2004  
DIN 4420:2004  
BGG 927:1996  
ZEK 01.2-08

The product meets the safety and health requirements of the German Equipment and Product Safety Act section 7 subsection 1 sentence 2 GPSG. The certification marks shown above can be affixed on the product. It is not permitted to alter the certification marks in any way. In addition the certificate holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. See also notes overleaf.

**Test report no.:**

028-71386240-101

**Valid until:**

2016-06-09

**Date,** 2011-06-15

*H. Schmidt*  
(Hartin Schmidt)

Page 1 of 3

TÜV SÜD Product Service GmbH - Zertifizierstelle - Ridlerstraße 85 - 80339 München - Germany

A17 12.09

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# 9. COMPONENTS

## Aluminium Stage 600 – the variants

1



1348.xxx Aluminium Stage 600

### 1328.xxx Aluminium Stage 600, perforated

Not shown. The possible uses set forth in these Instructions for Assembly and Use can also be achieved using the *Aluminium Stage 600 in its perforated version*. Only its use in standard and roof brick guards is not permissible.

Length [m]	Loading capacity [kN/m <sup>2</sup> ]	Width [m]	Height [m]	Weight [kg]	Ref. No.	Weight [kg]	Ref. No.
3.18	2.0	0.6	0.09	20.0	1348.318	18.6	1328.318
4.12	2.0	0.6	0.09	26.0	1348.412	24.3	1328.412
4.75	2.0	0.6	0.09	29.0	1348.475	27.0	1328.475
5.20	2.0	0.6	0.12	38.0	1348.520	33.6	1328.520
6.15	2.0	0.6	0.12	45.0	1348.615	40.0	1328.615
7.10	2.0	0.6	0.12	52.0	1348.710	46.0	1328.710
8.00	1.5	0.6	0.15	68.0	1348.800	59.0	1328.800
9.10	1.5	0.6	0.15	76.0	1348.910	66.0	1328.910
10.00	1.5	0.6	0.15	85.0	1348.100	74.0	1328.100

2



1349.xxx Aluminium Stage 600, folding

### 1329.xxx Aluminium Stage 600, folding and perforated

Not shown. The possible uses set forth in these Instructions for Assembly and Use can also be implemented using the *Aluminium Stage 600 in its folding and perforated version*. Only its use in roof brick guards is not permissible.

Length [m]	Loading capacity [kN/m <sup>2</sup> ]	Width [m]	Height [m]	Weight [kg]	Ref. No.	Weight [kg]	Ref. No.
5.10	1.5	0.6	0.12	47.0	1349.510	43.0	1329.510
7.30	1.5	0.6	0.12	61.0	1349.730	56.6	1329.412
9.15	1.5	0.6	0.15	86.0	1349.915	75.0	1329.475

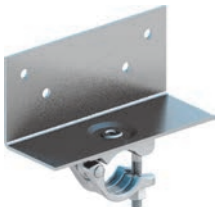
## Accessories

3



**1331.000 Clamp**  
of steel. For connecting Aluminium Stages 600 (not suitable for Aluminium Stage 600, folding).  
Weight 0.4 kg.

4



**4717.019 Squared timber coupler, large WS 19**  
**4717.022 Squared timber coupler, large WS 22**  
of steel. As lift-off preventer.  
Weight 1.9 kg.

5



**1269.019 Double coupler WS 19**  
**1269.022 Double coupler WS 22**  
of steel. Class BB, EN 74-1 RA BB C3 M, quality-monitored, for use in the classes B and BB on steel and aluminium tube.  
Weight 1.3 kg.

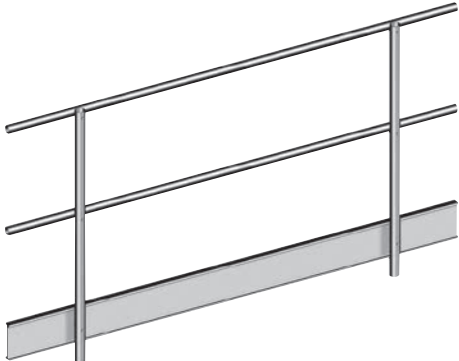
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**1270.019 Swivel coupler WS 19**  
**1270.022 Swivel coupler WS 22**  
of steel. Class B, EN 74-1 SW B C3 M, quality-monitored, for use in the class B on steel and aluminium tube.  
Weight 1.5 kg.

## Accessories for three-part side protection

7



**1332.200 Double guardrail 2.0 m with toe board**  
of aluminium. Folds together for transport. Dimensions 1.1 x 2.0 m, weight 9.7 kg.

**1332.300 Double guardrail 3.0 m with toe board**  
of aluminium. Folds together for transport. Dimensions 1.1 x 3.0 m, weight 12.9 kg.

Ref. No.	6201 3.18 m	6202 4.12 m	6203 4.75 m	6204 5.20 m	6205 6.15 m	6206 7.10 m	6207 8.00 m	6208 9.10 m	6209 10.00 m
1332.200	0	2	1	1	0	2	1	0	2
1332.300	1	0	1	1	2	1	2	3	2
1330.000	2	4	4	4	4	6	6	6	8
1333.000	1	2	2	2	2	3	3	3	4

Ref. No.	6210 5.10 m	6211 7.30 m	6212 9.15 m
1332.200	2	0	4
1332.300	0	2	0
1330.000	4	4	8
1333.000	2	2	4

8



**1330.000 Guardrail fixing for Ref. No. 1332**  
of aluminium. For fastening the double guardrail to the Aluminium Stage. Length 0.5 m, weight 0.9 kg.

9



**1333.000 Guardrail locking clip for Ref. No. 1330**  
of steel. For securing the double guardrail with the guardrail fixture. Weight 0.1 kg.

10



**1334.000 Guardrail mounting standard 1.2 m** of aluminium. For connecting the three-part side protection made from scaffolding tubes, guardrail clamps and toe board.

Length 1.2 m, weight 2.4 kg.

11



**1725.157 Single guardrail, 1.57 m** of steel. Weight 2.9 kg.

**1725.257 Single guardrail, 2.57 m** of steel. Weight 4.7 kg.

**1725.207 Single guardrail, 2.07 m** of steel. Weight 3.8 kg.

**1725.307 Single guardrail, 3.07 m** of steel. Weight 5.6 kg.

12



**1757.157 Toe board, 1.57 m** of wood. Weight 3.1 kg.

**1757.257 Toe board, 2.57 m** of wood. Weight 5.6 kg.

**1757.207 Toe board, 2.07 m** of wood. Weight 4.7 kg.

**1757.307 Toe board, 3.07 m** of wood. Weight 6.8 kg.

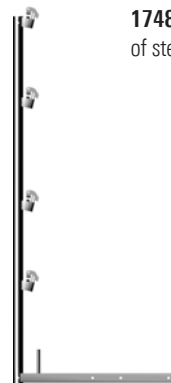
13



**1771.073 Guardrail support and SpeedyScaf roof guard support holder, 0.73 m** of steel. Weight 6.0 kg.

## Accessories for SpeedyScaf roof guard

14



**1748.000 SpeedyScaf roof guard support, 0.73 m** of steel. Weight 12.1 kg.

15



**1749.157 SpeedyScaf roof guard, 1.57 m**  
Dimensions 1.00 x 1.57 m, weight 15.5 kg.

**1749.207 SpeedyScaf roof guard, 2.07 m**  
Dimensions 1.00 x 2.07 m, weight 17.7 kg.

**1749.257 SpeedyScaf roof guard, 2.57 m**  
Dimensions 1.00 x 2.57 m, weight 21.1 kg.

**1749.307 SpeedyScaf roof guard, 3.07 m**  
Dimensions 1.00 x 3.07 m, weight 24.4 kg.



More Possibilities. The Scaffolding System.

**Wilhelm Layher GmbH & Co. KG**  
Scaffolding Grandstands Ladders

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